



## The weather watch/warning system for stroke and asthma in South Korea

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### Abstract:

Weather watch/warning systems have been established for human health outcomes. Our study aims to develop and demonstrate a weather watch/warning system for asthma and stroke within the whole of South Korea, using a stratified regression approach. We converted claim-based health insurance data covering almost all medical claims for the only health insurance system in Korea for asthma and stroke from 1996-2003 into personalized disease episode data, and combined them with meteorological data. We utilized a step-wise regression method using factors extracted from the meteorological data to develop stratified models for six (stroke) and nine (asthma) regional and day-of-week strata. Validation studies showed that the actual number of hospitalizations in 2003 increased according to the three-leveled predictions (levels I, II, and III) from the model based on the 1996-2002 data. This system is accessible via the internet ([http://industry.kma.go.kr/APP/sub\\_APP15\\_H01.htm](http://industry.kma.go.kr/APP/sub_APP15_H01.htm)) at the Korean Meteorological Administration website.

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### Resource Description

#### Early Warning System: ☒

resource focus on systems used to warn populations of high temperatures, extreme weather, or other elements of climate change to prevent harm to health

A focus of content

#### Exposure : ☒

weather or climate related pathway by which climate change affects health

Meteorological Factors, Meteorological Factors, Meteorological Factors, Temperature, Other Exposure

**Temperature:** Fluctuations

**Other Exposure:** visibility; cloudiness

#### Geographic Feature: ☒

resource focuses on specific type of geography

None or Unspecified

#### Geographic Location: ☒

# Climate Change and Human Health Literature Portal



resource focuses on specific location

Non-United States

**Non-United States:** Asia

**Asian Region/Country:** Other Asian Country

**Other Asian Country:** South Korea

**Health Impact:**

specification of health effect or disease related to climate change exposure

Cardiovascular Effect, Respiratory Effect

**Cardiovascular Effect:** Stroke

**Respiratory Effect:** Asthma

**Mitigation/Adaptation:**

mitigation or adaptation strategy is a focus of resource

Adaptation

**Model/Methodology:**

type of model used or methodology development is a focus of resource

Outcome Change Prediction

**Population of Concern:** A focus of content

**Population of Concern:**

populations at particular risk or vulnerability to climate change impacts

Elderly

**Resource Type:**

format or standard characteristic of resource

Research Article

**Timescale:**

time period studied

Short-Term (

**Vulnerability/Impact Assessment:**

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content